

## REMARKS

Claims 1-14 are pending in the present Application. Claims 13-14 have been canceled, claims 1, 4-5, 7, 9, and 11-12 have been amended, and claim 15 has been added, leaving Claims 1-12 and 15 for consideration upon entry of the present Amendment.

Claims 1, 4-5, 7, 9, and 11-12 have been amended, and new claim 15 has been added. No new matter has been introduced by these claim amendments as support for these amendments is found at least at p. 6, line 30 to p. 7, line 16; Fig. 2; p. 7, line 31 to p. 8, line 17; p. 11, lines 13-20; claims 5 and 9 as filed; Fig. 5 (S540); p. 7, lines 18-20; p. 9, lines 9-17; and Fig. 1.

Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

### Examiner Interview

Applicant thanks the Examiner for the courtesy of a telephonic interview on August 21, 2007 with Applicant's representative (Sandra Shaner). The rejections under §101 and §112 were discussed including proposed claim amendments to overcome these rejections.

### Sequence Rules Compliance

The Office Action alleges that the sequence listing filed 4/4/07 is still defective. See the attached "Raw Sequence Listing Error Report." (6/28/07 OA, pg. 2).

Applicant notes that on 4/4/07, an error was noted in the sequence listing filed at 14:56:59 in response to the Notice and consequently at 17:04:22 a second correct sequence listing was filed in paper (pdf) and crf (text file) form, with a new Statement under 1.821 and with a transmittal explaining that the current submission should replace the earlier submission. This replacement submission on April 4, 2007 is present in the image file wrapper.

The Raw Sequence Listing Error Report issued by STIC is for the sequence listing submitted at 14:56:59 on 4/4/07, not for the replacement filing made at 17:04:22 on 4/4/07.

For expediency, Applicant herein is resubmitting the sequence listing submitted at 17:04:22 on 4/4/07 which Applicant believes is fully compliant with the sequence rules.

Objections to the Specification

The specification is objected to because the title is not descriptive...”(6/28/07 OA, pg. 3). Applicants herein amend the title to SYSTEM, METHOD, AND COMPUTER PROGRAM FOR DETERMINING A LOCATION OF A TARGET SEQUENCE IN A GENOME SEQUENCE.

Applicants believe the amended title is clearly indicative of the claimed invention and request withdrawal of the objection.

Claim Rejections Under 35 U.S.C. § 101

Claims 1-14 stand rejected under 35 U.S.C. § 101 as directed to nonstatutory subject matter. Applicants respectfully traverse this rejection.

The Examiner stated that a statutory process must produce a useful, concrete, and tangible result, and that the instant claims fail to produce a tangible result. Also, since the process of claim 7 was deemed to be nonstatutory, the apparatus designed only to perform such a method is also nonstatutory.

Claims 13-14 are cancelled, rendering their rejection moot.

As stated in our previous response, Applicant disagrees with the interpretation of the US PTO with respect to the current case law regarding statutory subject matter, e.g., *State Street Bank & Trust Co. v. Signature Financial Group Inc.* (149 F. 3d 1368; 47 USPQ2d 1596 (Fed. Cir. 1998)).

However, in the interest of furthering prosecution, Claim 7 is amended to better define the invention. Claim 7 now includes a step of “outputting the location of the target sequence in the genome sequence to a user.” Applicant believes that the process of claim 7 and dependent claims 8-11 is now clearly statutory, and therefore that the apparatus claims of claims 1-6 which performs the method is also therefore clearly statutory.

Additionally, claim 12 is amended to clarify that the computer program on the computer readable medium is to execute all steps of claim 7.

Applicant believes claims 1-12 are fully compliant with §101 and requests reconsideration and withdrawal of these rejections.

Claim Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 1-14 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the Specification in such a way as to reasonably convey to one skilled in relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection.

In particular, the Examiner has alleged the limitation “a record for a sequence information for each version of a genome sequence comprising the sequence information” in previously amended claims 1, 7 and their dependent claims is considerably broad because it can include every version of any genome sequence published in any place given the indefiniteness of the claims set forth in the rejections under 35 U.S.C. § 112, second paragraph and rejects the limitation as new matter.

Applicant has amended independent claims 1 and 7 to better define the invention and to clarify that the crosslink map comprises “records for a plurality of versions of a genome sequence”. The phrase “records for a plurality of versions of a genome sequence” is supported by the specification at least at p. 6, line 30 to p. 7, line 16; by Fig. 2; and by claims 1, 7, and 12 as originally filed.

Applicant requests reconsideration and withdrawal of the rejection of Claims 1-12 under 35 U.S.C. § 112.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13-14 are cancelled, rendering their rejection moot.

Among the phrases in claims 1-12 cited as being indefinite by the Examiner are the following:

- the phrase “each version of a genome sequence” recited in claims 1 and 7 is unclear;
- the phrase “wherein the location estimation unit determines the location of the target sequence

by assigning a higher priority to the calculated difference value genetic for a reference sequence information organism represented in the crosslink map by a larger number of records” recited in claims 4 and 9 is unclear because it is not clear what “higher” and “larger” are referenced to; and

- the phrase “a computer readable medium having embodied thereon a computer program for a the method of determining a location of a target sequence in a genome sequence of claim 7” recited in claim 12 is unclear with respect of which steps are executed by the program.

Applicant has amended the claims to better define and clarify the amendment.

In particular in claims 1 and 7, the phrase “each version of a genome sequence” is amended to “a plurality of versions of a genome sequence”. In the rejection, the Examiner appeared confused by the term “version”. Applicants contend that the term “version” in reference to a sequence in the art of sequence databases is a well-known concept and that claims 1 and 7 meet the requirements of §112, second paragraph.

Claims 4 and 9 are amended to clarify the element “assigning a priority order to the difference value calculated for the reference sequence information based on number of records for the reference sequence information in the crosslink map.” As the amended claims eliminate use of “higher” and “larger”, Applicants believe the these claims meet the requirements of §112, second paragraph.

Claim 12 is amended to recited the method steps to be executed by the computer program

Further, antecedent basis issues pointed out in several claims 1 and 5 are corrected.

Applicant believes with the amendments made herein, claims 1-12 meet the requirements of §112, second paragraph. Applicant therefore requests reconsideration and withdrawal of the rejection under §112, second paragraph

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

CANTOR COLBURN LLP

/Sandra L. Shaner/

By \_\_\_\_\_  
Sandra L. Shaner  
Registration No. 47,934

Date: August 28, 2007  
CANTOR COLBURN LLP  
55 Griffin Road South  
Bloomfield, CT 06002  
Telephone (860) 286-2929  
Facsimile (860) 286-0115  
Customer No.: 23413